

WELLBORE POWER GENERATING SYSTEM FOR DOWNHOLE OPERATION

A power generating system (100) for a downhole operation (10) having production tubing (40) in a wellbore (12) includes a magnetized rotation member (110) coupled to the wellbore (12) within the production tubing (40), the rotation member (110) having a passageway (112) through which objects, such as tools, may be passed within the production tubing (40). Support braces (170, 172) couple the rotation member (110) to the production tubing (40) and allow the rotation member (110) to rotate within the production tubing (40). Magnetic pickups (150, 152) are predisposed about the rotation member (110) within the wellbore (12) and a power conditioner (200) is provided to receive currents from the magnetic pickups (150, 152) for storage and future use. The rotation member (110) rotates due to the flow of fluid, such as crude oil, through the production tubing (40) which causes the rotation member (110) to rotate and induce a magnetic field on the magnetic pickups (150, 152) such that electrical energy is transmitted to the power conditioner (200), the power conditioner able to store, rectify, and deliver power to any one of several electronic components within the wellbore (12).

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